## Claims

1. A method of making a lamina sample by forming a lamina part by etching-working by scan-irradiating a focused ion beam to a sample surface, and taking out the lamina part, characterized in that, at the same time as making the lamina part by an etching working of a 1st focused ion beam or with an irradiation of the 1st focused ion beam being temporarily interrupted, by scan-irradiating a 2nd focused ion beam from a direction parallel to a side wall of the lamina part having been made, a surface portion of the lamina is microscope-observed to thereby measure a thickness of the lamina part, and the etching working is finished by confirming the fact that the thickness of the lamina part has become a predetermined thickness.

2. A method of making a lamina sample by forming a lamina part by etching-working by scan-irradiating a focused ion beam to a sample surface, and taking out the lamina part, comprising:

a 1st process of etching-working both sides of a region, which is to be made a lamina, under a 1st focused ion beam condition by using a 1st focused ion beam,

a 2nd process of etching-working a side wall of the region, which is to be made the lamina, by using the 1st focused ion beam subsequently to the 1st process under a 2nd focused ion beam condition in which is an acceleration voltage is low and/or a beam current is low in comparison with the 1st focused ion

beam condition, and

a 3rd process of measuring a thickness of the region, which is to be made the lamina, by microscope-observing a surface portion of the region, which is to be made the lamina, by scan-irradiating a 2nd focused ion beam from a direction parallel to a side wall of the region, which is to be made the lamina,

characterized in that the thickness of the region, which is to be made the lamina, is formed into a predetermined thickness while simultaneously performing or alternately repeating the 2nd process and the 3rd process.

3. A method of making a lamina sample set forth in claim 2, characterized in that, after having been formed into a 1st desired thickness by applying the 2nd and 3rd processes to a 1st side wall of the region which is to be made the lamina, it is formed into the predetermined thickness by applying the 2nd and 3rd processes to a 2nd side wall of the region which is to be made the lamina.

4. A method of making a lamina sample set forth in claim 2 or 3, characterized in that, when etching-working the side wall of the region, which is to be made the lamina, in the 2nd process, the sample is slanted such that the 1st focused ion beam is irradiated to the side wall so as to correct its slant.

5. A method of making a lamina sample by forming a lamina part by etching-working by scan-irradiating a focused ion beam to a sample surface, and taking out the lamina part, comprising:

a 1st process of etching-working both sides of a region, which is to be made a lamina, under a 1st focused ion beam condition by using a 1st focused ion beam,

a 2nd process of etching-working a side wall of the region, which is to be made the lamina, by scan-irradiating a 2nd focused ion beam from a direction parallel to the side wall of the region, which is to be made the lamina, and an angle different from the 1st focused ion beam, and

a 3rd process of measuring a thickness of the region, which is to be made the lamina, by microscope-observing a surface portion of the region, which is to be made the lamina, by scan-irradiating under a 2nd focused ion beam condition, in which an acceleration voltage is low in comparison with the 1st focused ion beam condition, by using the 1st focused ion beam,

characterized in that the thickness of the region, which is to be made the lamina, is formed into a predetermined thickness while simultaneously performing or alternately repeating the 2nd process and the 3rd process.

6. A method of making a lamina sample set forth in claim 5, characterized in that, after having been formed into a 1st desired thickness by applying the 2nd and 3rd processes to a 1st side wall of the region which is to be made the lamina, it is formed into the predetermined thickness by applying the 2nd and 3rd processes to a 2nd side wall of the region which

is to be made the lamina.

7. A method of making a lamina sample set forth in claim 5 or 6, characterized in that, when etching-working the side wall of the region, which is to be made the lamina, in the 2nd process, the 2nd focused ion beam is irradiated to the sample by slanting the sample such that, in the side wall, its slant is corrected.

8. A method of making a lamina sample by forming a lamina part by etching-working by scan-irradiating a focused ion beam to a sample surface, and taking out the lamina part, characterized by comprising:

a 1st process of sputtering-etching-working a 1st worked region for exposing a 1st side wall of a region, which is to be made a lamina, under a 1st focused ion beam condition of a 1st focused ion beam and, at the same time, sputtering-etching-working a 2nd worked region for exposing a 2nd side wall of the region, which is to be made the lamina, under a 1st focused ion beam condition of a 2nd focused ion beam,

a 2nd process of sputtering-etching-working the 2nd worked region under the 1st focused ion beam condition of the 1st focused ion beam and, at the same time, sputtering-etching-working the 1st worked region under a 1st focused ion beam condition of the 2nd focused ion beam,

a 3rd process of microscope-observing a surface portion

of the lamina by scan-irradiating under a 3rd focused ion beam condition of the 2nd focused ion beam at the same time as sputtering-etching-working the 1st side wall by slanting the sample such that the 1st focused ion beam enters so as to correct, in the 1st side wall, its slant under a 2nd focused ion beam condition in which an acceleration voltage is low and/or a beam current is low than the 1st focused ion beam condition by using the 1st focused ion beam, or with an irradiation of the 1st focused ion beam being temporarily interrupted, and finishing the etching working by the 1st focused ion beam by confirming the fact that a thickness of the lamina has become a 1st predetermined thickness by measuring the thickness of the lamina, and

a 4th process of microscope-observing the surface portion of the lamina by scan-irradiating under the 3rd focused ion beam condition of the 2nd focused ion beam at the same time as sputtering-etching-working the 2nd side wall by slanting the sample such that the 1st focused ion beam enters so as to correct, in the 2nd side wall, its slant under the 2nd focused ion beam condition of the 1st focused ion beam, or with the irradiation of the 1st focused ion beam being temporarily interrupted, and finishing the etching working by the 1st focused ion beam by confirming the fact that the thickness of the lamina has become a 2nd predetermined thickness thinner than the 1st predetermined thickness by measuring the thickness of the

lamina.

9. A method of making a lamina sample set forth in any of claims 1 to 6, characterized by having a finishing process of sputtering-etching by irradiating an inert ion beam to the side wall of the region which is to be made the lamina, and in that, after a sputtering etching working by the inert ion beam, a thickness of the region, which is to be made the lamina, is made so as to become a desired thickness.

10. A composite focused ion beam apparatus comprising a 1st focused ion beam lens-barrel scan-irradiating an ion beam, which has generated from an ion source, to a sample surface while being focused, a 2nd focused ion beam lens-barrel scan-irradiating the ion beam, which has generated from the ion source, to the sample surface while being focused, and a sample stage which mounts a sample, has plural drive shafts and moves the sample in a three-dimensional space,

characterized in that a 1st focused ion beam having been irradiated from the 1st focused ion beam lens-barrel and a 2nd focused ion beam having been irradiated from the 2nd focused ion beam lens-barrel are disposed so as to be irradiated at different angles to the same place of the sample surface having been mounted to the sample stage, and the sample stage slants, with at least a 2nd plane intersecting perpendicularly to a 1st plane formed by the 1st focused ion beam lens-barrel and the 2nd focused ion beam lens-barrel being made a reference,

so as to be capable of altering an angle with respect to the 1st plane.

11. A composite focused ion beam apparatus comprising a 1st focused ion beam lens-barrel scan-irradiating an ion beam, which has generated from an ion source, to a sample surface while being focused, a 2nd focused ion beam lens-barrel scan-irradiating the ion beam, which has generated from the ion source, to the sample surface while being focused, an inert ion beam lens-barrel scan-irradiating an ion beam, which has generated from an inert ion source, to the sample surface while being focused, and a sample stage which mounts a sample, has plural drive shafts and moves the sample in a three-dimensional space,

characterized in that the 1st focused ion beam lens-barrel, the 2nd focused ion beam lens-barrel and the inert ion beam lens-barrel are disposed on the same plane,

a 1st focused ion beam having been irradiated from the 1st focused ion beam lens-barrel, a 2nd focused ion beam having been irradiated from the 2nd focused ion beam lens-barrel and an inert ion beam having been irradiated from the inert ion beam lens-barrel are disposed so as to be irradiated at different angles to the same place of the sample surface having been mounted to the sample stage, and the sample stage slants, with at least a 2nd plane intersecting perpendicularly to a 1st plane formed by the 1st focused ion beam lens-barrel, the 2nd focused ion

beam lens-barrel and the inert ion beam lens-barrel being made a reference, so as to be capable of altering an angle with respect to the 1st plane.